

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018332**Date Inspected:** 29-Nov-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	William Sherwood and Tom Pasqua			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b> <b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	Orthotropic Box Girder	

**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 6E-PP37.5-E2-LSW longitudinal stiffener underneath the ventilation access hole inside, QA randomly observed ABF welder Xiao Jian Wan ID #9677 perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding cover pass on the stiffener splice butt joint. The joint has a double V joint preparation that was being welded from one side using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. During the shift, the welder has completed welding one side of the west longitudinal stiffener (LSW) and held the preheat maintenance of more than 200 degrees Fahrenheit for three hours as required. The QA Inspector noted the ABF QC John Pagliero was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC was closely monitoring the issuance of E9018 electrodes due to its limited exposure time allowed.

At OBG 7W/8W side plate 'C' inside, QA observed ABF welder Songtao, Huang lining up his track mounted welder nozzle holder and preparing welding equipment to weld the splice butt joint. Prior to start welding, QA performed fit up verification on the alignment of the joint and noted the alignment measured was less than 2.0mm. The root gap between the abutting plates was also measured more than 4.0mm on most of the length of the joint

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except on two locations at C1 wherein the gap was measured less than 4.0mm but already marked by QC for grinding/opening the root gap.

After the fit up verification, QA checked the preheat of the plate and was noted greater than 150 degrees Fahrenheit. QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 perform CJP groove welding root pass to fill pass on the splice butt joint. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS)

ABF-WPS-D15-3042B-1. The joint being welded has a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding on the splice butt joint was still continuing and should remain tomorrow.

At OBG 8E/9E edge plate 'B' outside, QA randomly observed ABF/JV qualified welder Fred Kaddu ID # 2188 continuing to perform CJP groove fill pass welding. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with copper backing bar. ABF Quality Control (QC) Tom Pasqualone was noted monitoring the welding parameters of the welder. At the end of the shift, root pass welding of the splice joint at location mentioned above was still continuing and should remain tomorrow.

At OBG 8E/9E edge plate 'F' outside, QA randomly observed ABF/JV qualified welder Jorge Lopez ID #6149 continuing to perform CJP groove cover pass welding. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1040B. The joint being welded has a single V-groove butt joint with copper backing bar. ABF Quality Control (QC) Tom Pasqualone was noted monitoring the welding parameters of the welder. At the end of the shift, cover pass welding of the splice joint at location mentioned above was completed.

At OBG 8E/9E top deck plate 'A' outside, QA randomly observed ABF/JV qualified welder Wai Kitlai perform CJP groove welding repair. The welder was observed welding in the 1G (flat) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1001-Repairs. The repair excavation located at Y-dimension 5200mm and having excavation profile of 280mm long x 30mm wide x 14mm deep was preheated to more than 140 degree Fahrenheit using propane gas torch prior welding. Prior welding, ABF QC Tom Pasqualone was also observed performing Magnetic Particle Testing (MT) on the boat shape repair excavation. During the shift, ABF QC Tom Pasqualone was noted monitoring the welder.

At OBG west panel point PP20 to PP22 top deck plate, QA randomly observed ABF welder Eric Sparks perform all around fillet welding on 3" x 3" x 3/8" thick (3" long) angular to top deck plate. The welder was observed welding in the 2F (horizontal) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-F1200A. ABF Quality Control (QC) Mike Johnson was noted monitoring the welding parameters of the welder. These 3" x 3" x 3/8" angulars being welded are intended for sewer/piping support.

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### Summary of Conversations:

No significant conversation today.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy, 510-385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Lizardo, Joselito	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell, Bill	QA Reviewer

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